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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,032	09/21/2001	Masayoshi Shimizu	826.1751	4255
21171	7590	03/08/2005		
STAAS & HALSEY LLP			EXAMINER	
SUITE 700			EDWARDS, PATRICK L	
1201 NEW YORK AVENUE, N.W.				PAPER NUMBER
WASHINGTON, DC 20005			2621	
				DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/957,032	SHIMIZU, MASAYOSHI	
	Examiner	Art Unit	
	Patrick L Edwards	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 October 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-34 is/are pending in the application.
 4a) Of the above claim(s) 2-13, 16, 20-24 and 27-31 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1, 14, 15, 17-20, 25, 26 and 32-34 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 September 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species I in the reply filed on 10-12-2004 is acknowledged. The traversal is on the ground(s) that examination of any of the variations of the main method of the invention necessarily requires examination of the main method. This is not found persuasive because examination of all the variations of the main method (all of the species indicated in the restriction (election) requirement mailed on August 11, 2004) is not necessary for a proper examination of the main method. Furthermore, such an examination would place an undue burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 2-13, 16, 20-24, and 27-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10-12-2004.

Information Disclosure Statement

3. The documents (documents 5-10) mentioned in the applicant's disclosure are considered extremely pertinent to the prosecution of the application. However, these documents have not been provided in an information disclosure statement. The examiner hereby requests that the applicant provide an information disclosure statement which includes the aforesaid documents. This request for information is proper under 37 C.F.R. § 1.105.

Drawings

4. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 14, 15, 17-19, 25, 26, and 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

All of these claims refer to the “status” of an image (the claims that don’t explicitly recite the word “status” are dependent on claims that do). The metes and bounds of term ‘image status’ (or ‘status of an image’) as recited in the claims are not clear. The ‘status’ of an image obviously has something to do with the classification of a small area of the image into an image category (for example, an image could be comprised of text areas, halftone areas, photographic areas etc.), but it is not clear what type of image categories are defined by the ‘status’ of the image as recited in the claims (i.e. does the ‘status’ of an image tell us whether the image is light/dark, edge/non-edge, foreground/background, binary/gray-scale, etc.?).

The applicant’s specification also fails to provide a clear and unambiguous definition for this term. Paragraph [0067] of the specification provides the only clue as to what this phrase is referring to (in this case it tells us whether the image area is ‘bright’ or ‘dark’), but this example does not suffice as a definition for the term. For instance, does the ‘status’ of an image area always define that area as belonging in one of two possible categories (i.e. ‘bright’ or ‘dark’)? If so, is the ‘status’ a binary value (i.e. 0 for ‘bright’, 1 for ‘dark’)? Does the image status ever classify an image area as being one of more than two possible categories (i.e. text, halftone or photographic)? What other image categories could the ‘image status’ be referring to? Is status determined for each of the divided image areas, or for the image as a whole?

With regard to claims 15, 19, 26 and 34, these claims all make reference to a plurality of computed statistic amounts with lack antecedent basis in the claim.

For example, claim 15 refers to the “computed statistic amounts”, but the claim only recites computing a singular “statistic amount”.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 14, 17, 25, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Winkelman (USPN 5,748,802).

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With regard to claim 1, Winkelmann discloses dividing an image into a plurality of areas (col. 3 lines 12-13). The sub-images disclosed in Winkelmann are analogous to the “areas” recited in the claim.

Winkelmann further discloses computing a characteristic amount for each of the plurality of areas (col. 11 lines 15-23). Per the applicant’s specification (see paragraph 88 et al), the mean value of a sub-image as disclosed in Winkelmann qualifies as the “characteristic amount” recited in the claim.

Winkelmann further discloses computing a statistic amount for estimation of the status of the image using the characteristic amount (col. 11 lines 25-38). Per the applicant’s specification (see, *inter alia*, paragraph [0089]), the standard deviation (or scatter) disclosed in Winkelmann qualifies as the “statistic amount” recited in the claim. Winkelmann further discloses that the computed standard deviation is used in the estimation of the status of the image (col. 12 lines 45-63). An image’s “classification” as disclosed in Winkelmann is analogous to the image “status” recited in the claim.

With regard to claim 14, Winkelmann further discloses comparing the computed statistic amount with a predetermined value (col. 12 lines 45-62). The scatter threshold SwsDev disclosed in Winkelmann is analogous to the predetermined value recited in the claim.

Winkelmann further discloses determining a correcting parameter based on the comparison result (col. 13 lines 1-41). The results of the above comparison determine which sub-image histograms are utilized in the calculation of the aggregate histogram. The aggregate histogram is employed in the calculation of the correction curve (col. 13 lines 39-41). Therefore, this aggregate histogram qualifies as the claimed correcting parameter and we can consequently conclude that the determination of a correcting parameter is based on the aforesaid comparison.

Winkelmann further discloses using this corrected parameter to correct the original image (col. 15 lines 7-14).

With regard to claims 17 and 25, Winkelmann discloses an apparatus for performing the method of claim 15 (see winkelmann figure 1).

With regard to claims 32 and 33, a computer-readable recording medium that stores a program which causes the computer to execute the steps of claims 1 and 14 is essential if the image processing method disclosed in Winkelmann is to function. Therefore, a computer-readable recording medium is inherent in the Winkelmann disclosure.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelmann as applied to claim 17 above, and further in view of Kinjo et al. (USPN 6,631,208). The arguments as to the relevance of Winkelmann as applied above are incorporated herein.

With regard to claim 18, Winkelmann discloses that the statistic amount is computed based on the characteristic amount, but fails to expressly disclose that this computation also involves a weight coefficient which corresponds to each area.

Kinjo, however, discloses calculating a statistic amount using both a characteristic amount (Kinjo col. 17 line 60 – col. 18 line 3) and a weight coefficient (Kinjo col. 17 lines 42-46) corresponding to each image area. The fourth mark disclosed in Kinjo is analogous to the “characteristic amount” recited in the claim. Further, the “fifth mark” disclosed in Kinjo is analogous to the weight coefficient recited in the claim.

Kinjo further discloses determining an average value of two marks (Kinjo col. 18 lines 20-44). This average value is analogous to the claimed “statistic amount”.

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Winkelmann’s image status estimation method by using both a characteristic amount and a weight coefficient as taught by Kinjo. Such a modification would have allowed for a method which had additional criteria for determining discoloration regions of an image (Kinjo col. 18 lines 14-20).

11. Claims 15, 19, 26, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelmann as applied to claims 14, 19, 26, and 34 above, and further in view of Katajamaki et al. (“Image Dependent Gamma Selection Based on Color Palette Equalization and a Simple Lightness Model”). The arguments as to the relevance of Winkelmann as applied above are incorporated herein.

With regard to claim 15, Winkelmann discloses using a correcting parameter to generate a corrected image. Winkelmann further discloses determining a correcting parameter by comparing a computed statistic amount with a predetermined value. Winkelmann fails to expressly disclose correcting the original image using a plurality of different correcting parameters to generate a plurality of corrected images. It follows that Winkelmann also fails to expressly disclose determining that the correction result is the corrected image obtained using the correcting parameter corresponding to the statistic amount closest to a predetermined value.

Katajamaki, on the other hand, discloses generating a plurality of corrected images by correcting an original image using a plurality of different correcting parameters (Katajamaki pg. 303: The reference describes using different values of a variable ‘f’ (i.e. a plurality of different correcting parameters) to generate a plurality of corrected images from an original image).

Katajamaki further discloses defining a corrected image obtained using a correcting parameter (in this case the optimal value (or correcting parameter) was 12) corresponding to a statistic amount closest to

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a predetermined value among the computed statistic amounts as an appropriate corrected image (Katajamaki pg. 303: again, the reference describes determining the parameter which produces the optimum result (i.e. defining a corrected image) by minimizing a root mean square error value (i.e. the computed statistic amount which was closest to a predetermined value for the statistic amount).).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Winkelman's image correcting method by generating a plural corrected images from plural correcting parameters and then determining the appropriate parameter and corresponding image by minimizing some predetermined error index as taught by Katajami. Such a modification would have allowed for an iterative image correction algorithm well suited for computer processing. It also would have allowed for the option of using a reference image in the image correction process as an ideal image with which corrected images could be compared to.

With regard to claims 19 and 26, Winkelman discloses an apparatus for performing the method of claim 15 (see winkelman figure 1).

With regard to claims 34, a computer-readable recording medium that stores a program which causes the computer to execute the steps of claims 1 and 14 is essential if the image processing method disclosed in Winkelman is to function. Therefore, a computer-readable recording medium is inherent in the Winkelman disclosure.

Double Patenting

12. Applicant is advised that should claims 17 and 19 be found allowable, claims 25 and 26 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

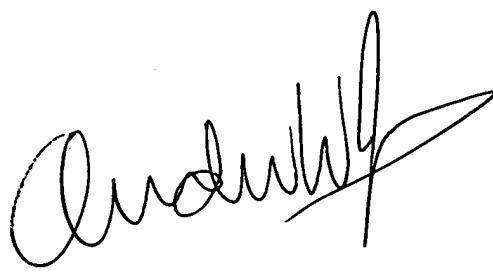
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L. Edwards

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ANDREW W. JOHNS
PRIMARY EXAMINER